It is the codification, explication, and documentation of these research designs which are Hyman's preoccupation in the book.

To instruct the reader about these research designs, Hyman employs a series of devices. A series of distinctions and definitions, beginning with the concept semisecondary analysis, are introduced and then broken down still more finely into categories such as secondary analysis by the primary analyst, secondary analysis incorporating primary data, semianalysis, etc. Unfortunately, these distinctions and definitions, while not improperly or incorrectly drawn, seem overly elaborate and not especially heuristic.

His next device is to describe the careers of highly successful secondary analysts, along with personal reports of their activities. While interesting, this approach, too (except where it describes specific research efforts which might have been included elsewhere in the book), does little to further the practical understanding of research design in secondary analysis.

In the last six chapters of the book, the research designs of secondary analysis are discovered and described as they have been employed in important research traditions and problem areas in the discipline. It is here that Hyman is at his best. He reviews important secondary analyses in the following study areas: social categories and groups, fundamental phenomena, and change. Special emphasis is also given to cross-national research and cohort analysis in these areas. As he savors each study and uses it to illustrate a particular research design or to show how a thorny methodological problem was solved, Hyman demonstrates that not only can secondary research produce as meaningful results as primary research, but it has a mystique and sense of discovery uniquely its own and every bit as exciting as that of primary research.

The enthusiasm I share with the author for secondary analysis and for his explication of it in those last six chapters does not prevent my quibbling with minor points in the work. I have already objected to the belaboring of distinctions with little pragmatic value. On the stylistic level, I also warn of the author's penchant for puns and/or word plays, especially on persons' names (e.g., he makes Mauss a mouse and has Pool pooling). This is a proclivity which may seem to some unseemly in a serious work, but which may be taken by others as a challenge (albeit a courageous one for this particular author to lay down).

Too little attention was paid to the technical problems of secondary analysis. While Hyman points out that modern technology has made available certain data sets and even research designs hitherto inaccessible or impossible, he nonetheless glosses over many of the difficulties involved in working with machine-readable archival data faced daily by those of us who must worry about densities, blocking factors, EBCDIC, and other requirements of the computer age. A strong technical chapter describing these aspects and at least warning of some of the problems of computer-to-computer incompatibility, along with a discussion of some of the available information processing packages, would be a real service to the neophyte secondary analyst. Hyman does present a listing of archives where data may be acquired for secondary analysis. A notable source of data omitted from the list and worth adding is the U.S. Government and its agencies, especially the Bureau of the Census which is making available its summary tapes and releasing to the public six independently drawn one percent samples of the individual census records—a sample survey of unprecedented magnitude.

The student venturing into secondary analysis for the first time will find this a very valuable book. It will show him what is possible by the diligent and clever application of secondary research designs, and save him much digging into the literature in search of methodological devices and justifications. However, this is not a book for raw beginners and to derive full benefit from the book the reader must be well grounded in social research methodology and measurement and be at least somewhat familiar with statistical reasoning and the nature of interpretation of empirical data.

I expect and hope this book will serve to elevate secondary analysis as a legitimate tool of social research. Perhaps I misperceive certain of my colleagues, but too often I have heard dissertations criticized because they did not involve the collection of original data, or students told that the only way in which one could really test a complex theory appropriately is through specifically designed crucial tests, and the like. The eloquence of Hyman's methodological arguments and his systematization of secondary research designs, along with the amassed evidence of real contributions to our discipline he presents and reviews, should put aside such assertions. In demonstrating the value of the technique and in codifying its methodological principles, Hyman has made an important contribution.

SIMULATION AND GAMING IN SOCIAL SCIENCE. By *Michael Inbar and Clarice S. Stoll. New York: Free Press*, 1972. 313 pp. $10.95.

COMPUTER SIMULATION OF HUMAN BEHAVIOR. By *John M. Dutton and William H. Starbuck. New York: Wiley*, 1971. 708 pp. $19.95.

Reviewer: DONALD HUGH SMITH, *University of Alabama at Huntsville*

Simulation and Gaming in Social Science is an excellent volume for those who know little about, but wish to become acquainted with the fundamentals of these increasingly popular processes. This volume contains a brief treatment of the meanings of simulation, a brief history of simula-

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tions, eight contributed case studies of man simulations, two contributed case studies of man-machine simulations and two contributed case studies of machine simulations. Each of these case studies is easy to follow and easy to understand. Each was contributed by a different author writing in his or her area of expertise. Considering the format this text maintains remarkable continuity. The authors successfully convey the meaning and usefulness of all types of simulations as well as any other volume this reviewer has read, including several excellent special issues of behavioral science journals treating simulation.

This volume clearly stresses man simulations which is, I suspect, because these games are more practical for the teacher for economic reasons and because they do not require a computer or computer trained personnel. In spite of this emphasis Inbar and Stoll have made the similarities, differences, and continuity between man simulations, man-machine simulations, and machine simulations quite clear.

The third part of this volume is directed to the design process in simulations. This section is not a complete "how to build a simulation in one easy lesson." It provides only the barest skeleton of the process for simulation building, although the case studies do complement this section. The authors, I believe, assume that one will have developed skills in theory construction and model building before beginning the creation of simulation games. The fact that this text does not offer a complete course on how to build simulations should not be considered a weakness. The intention, clearly is to inform and to explain simulations to the novice as well as excite the reader to a deeper interest in simulations.

Also included are two appendices, the first of which is an annotated bibliography. This bibliography contains most of the key fundamental materials that would be of value to social scientists interested in learning about simulations. In this context the bibliography is quite complete.

The second appendix is an annotated list of games available on the commercial market applicable to the social sciences. As the authors state, the list is not exhaustive and there are several excellent games that were not included on this list. It is, however, a good starting point. This is a useful book and should be a first volume read by anyone interested in learning about simulation games.

The authors of *Computer Simulation of Human Behavior* have put together a valuable anthology for those interested in computer simulations of human behavior. This large and ambitious volume is directed toward a narrow audience in a variety of disciplines, especially advanced graduate students or professionals in most of the behavioral sciences who have some computer skills. For persons in these categories this volume is both intelligible and valuable.

Dutton and Starbuck begin with a thorough statistical history of simulation models and an exhaustive bibliography of simulation studies. Also included in the introductory section of the text are articles on simulation model construction and process models of concept formation.

The rest of the book consists of sets of contributed case studies arranged into sections on individuals, individuals who interact, individuals who aggregate, and methodological issues, for a total of thirty-four case studies. Each of these categories contains a wide variety of simulation types, on a variety of subjects. Each category contains something of interest and value for professionals in nearly all substantive areas within the social sciences. Many of the specific contributed articles and examples of computer simulations deal with economic models. This reflects the fact that economic models and simulations are among the most fully developed, conceptually and operationally. Each of these sections includes at least two contributed articles that will be of specific interest to sociologists. The section on methodological issues ranges from simple to complex matters and could fit well into a methodology Reader.

I found the greatest value of this volume to be somewhat incidental to its purpose. In addition to its technical contribution, it includes a good solid course in methodology and theory construction. Almost all of the contributed articles include a detailed explanation of the emergence of the problem and the process through which the problem is translated into a logical model, manageable by a computer. As several of the contributers point out, this process does not permit the theorist to delude himself, with conceptual and logical sloppiness, into constructing spurious models. This process is justification enough for making simulation model construction a prerequisite for many of what the authors call the "atheoretic areas" within the behavioral sciences.

The major weakness of this volume is its breadth. Because of the wide variety of topics simulated, some readers will find it hard to see the value in many of the articles outside their areas of interest. Even though the book begins with the simplest conceptual examples and processes, it accelerates in complexity too rapidly to hold the uninitiated. As a reference work for those who work in computer simulations it is of great value. In many ways, however, this volume offers the average behavioral scientist considerably more information about simulations than he or she will want to know.

EXPLANATIONS. By *Gwynn Nettler. New York: McGraw-Hill,* 1970. 237 pp. $6.95.

Reviewer: NICHOLAS C. MULLINS, *Indiana University, Bloomington*

John Reed must have wondered what took me so long to write this review. The answer is that I didn't know quite how to explain my reaction to this book. It is a work of considerable scholarship

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